Abbingdon Music Research

CD-77 Reference Class

Compact Disk Processor

Owner's Manual

Downloaded from www.Manualslib.com manuals search engine

Downloaded from www.Manualslib.com manuals search engine

FCC Declaration of Conformity - United States only

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

Canadian Notice (Avis Canadien)

Class B Equipment

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Downloaded from www.Manualslib.com manuals search engine

CE

This products complies with the EMC Directive (89/336/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms (in parentheses are the equivalent international standards and regulations):

o EN55022 (CISPR 22) - Electromagnetic Interference

o EN55024 (IEC61000-4-2, 3, 4, 5, 6, 8, 11) - Electromagnetic Immunity

o EN61000-3-2 (IEC61000-3-2) - Power Line Harmonics

o EN61000-3-3 (IEC61000-3-3) - Power Line Flicker

o EN60950 (IEC60950) - Product Safety

Laser Safety

This CD player has been designed and manufactured according to FDA regulations "title 21,CFR, chapter 1, subchapter J, based on the Radiation Control for Health and Safety Act of 1968", and is classified as a Class 1 laser product.

No User Serviceable Components Inside.
For service, contact your Authorised
Dealer or Distributor. Any modifications to
this equipment will void all warranties.

DANGER - invisible laser radiation when opened and interlock failed or defeated. Avoid direct exposure to beam.

CAUTION - use of all controls, adjustment or performance of procedures other than specified herein may result in hazardous radiation exposure.

Downloaded from www.Manualslib.com manuals search engine

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this component.

This component weighs over 35 kilograms. Do not place this component on an unstable cart, stand, tripod, bracket or table as the component may fall causing serious injury to a child or adult and serious damage to the unit. An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the component and cart combination to overturn.

Any mounting of the device on a wall or ceiling should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

Read and follow all the safety and operating instructions before connecting or using this component.

All warnings on the component and in its operating instructions should be adhered to.

Retain this Owner's Manual for future reference.

Do not use this unit near water; for example, near a bath tub, washbowl, kitchen sink, laundry tub, in a wet basement or near a swimming pool.

Unplug the component from the wall outlet before cleaning. Never use benzine, thinner or other solvents for cleaning; use only a soft damp cloth.

Downloaded from www.Manualslib.com manuals search engine

Care should be taken so that objects do not fall, and liquids are not spilled into the enclosure through any openings.

This component should be serviced only by qualified AMR service personnel when:

A. The power cable or the power input socket has been damaged;

B. Objects have fallen, or liquid has been spilled into the component;

C. The component has been exposed to rain or liquids of any kind;

D. The component does not appear to operate normally or exhibits a marked change in performance;

E. The component has been dropped or the enclosure has been damaged.

DO NOT ATTEMPT SERVICING OF THIS UNIT-YOURSELF. REFER SERVICING

TO QUALIFIED AMR SERVICE PERSONNEL

Upon completion of any servicing or repairs, request the service point's assurance that only AMR Authorised Replacement Parts with the same characteristics as the original parts have been used, and that the routine safety checks have been performed to guarantee that the component is in a safe operating condition.

REPLACEMENT WITH UNAUTHORIZED PARTS MAY RESULT IN FIRE,

ELECTRIC SHOCK OR OTHER HAZARDS

Downloaded from www.Manualslib.com manuals search engine

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 metres.

On power sources

The mains power cable should be routed so that it is not likely to be walked on or pinched, especially near the plug or back panel receptacle. The component should not be disconnected from the AC power source as long as it is connected to the wall outlet, even if the component itself has been turned off.

If this component is not going to be used for a long time, be sure to disconnect the component from the wall outlet. To disconnect the AC power cable, grasp the plug itself; never pull the cable.

On placement

Just like a thermionic electron valve amplifier, with a compliment of 6 valves, the CD-77 will become warm during operation. This is normal. Given this, it is imperative that the installation of the CD-77 DOES NOT interfere with its proper ventilation.

For example, it should not be situated on a bed, sofa, rug or similar surface that may block the top or bottom ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet, that may impede the flow of air through its top and bottom ventilation openings.

Do not place the component in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock. Do not place the component in an inclined position. It is designed to be operated in a

Downloaded from www.Manualslib.com manuals search engine

horizontal position only. Do not place heavy objects on the component.

Keep the component and compact discs away from equipment with strong magnets, such as microwave ovens or large loudspeakers.

To prevent fire or shock hazard, do not place vessels filled with liquids, such as vases, on the component.

Touch-Sensitive Buttons

On the front fascia of this AMR component are touch-sensitive buttons. Due to the wide variance of climes around the world, instances may arise where to activate a button:

- the touching finger may be required to be in contact with both the button and the front fascia to register;

- the touching finger may have to touch the chassis to discharge any static electricity prior to button selection.

Running-In

AMR estimates that the CD-77 may take between 300-500 operating hours for all of the internal components to be fully-broken in. Please anticipate the sonic performance of the CD-77 to settle only after it has been used for this approximate length of time.

Stand-By

Please note that the solid state section needs to find its equilibrium and due to the (unavoidable) use of electrolytic capacitors (and an effect called soakage) around 24-48 hours of ‘standby’ (or operation) are required to stabilise performance. Therefore, ‘standby’ does not shut down the solid-state sections, only the valves.

Downloaded from www.Manualslib.com manuals search engine

Contents

WARNINGS 5

Section 1 - Unpacking and Setup 11
1a. Unpacking 12
1b. Setup 13

Section 2 - Component Overview 15
2a. Start-Up 19

Section 3 - Advanced Features 29
3a. OptiSample® 29
3b. DAC Input 31
3c. IR Link 31
3d. Crowbar 'Muting' Circuit 31
3e. OptiMains® Protection for Excessive Under/Over-Voltages 32

Downloaded from www.Manualslib.com manuals search engine

Section 4 - Technical Features 33

Appendix - Troubleshooting & Maintanence 34
Troubleshooting 34
Maintenance 35

Specifications 37

Downloaded from www.Manualslib.com manuals search engine

Figure 1.1 - Front Panel of the CD-77

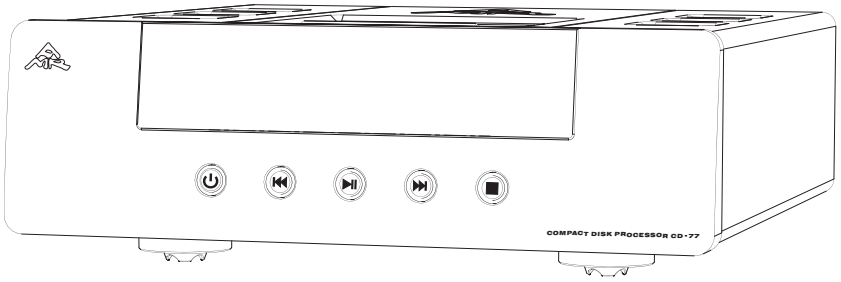
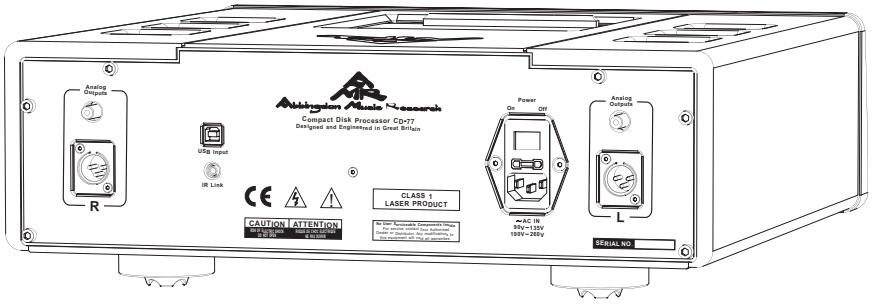


Figure 1.2 - Rear Panel of the CD-77



Downloaded from www.Manualslib.com manuals search engine

Thank you for purchasing this AMR reference class component.

We hope you derive as much pleasure from using this component as we have enjoyed making it for you.

1a. Unpacking

This section refers to the unpacking of the CD-77 and its subsequent setup.

Upon unpacking, please find:

Please check that all contents are present

i. *CD-77 Reference Class Compact Disk Processor.*
ii. *Aluminium CD puck.*
iii. *RC-77 Remote Commander (with 2 x AAA batteries).*
iv. *PC-77* OptiLink® *Reference mains power cable.*
v. *IC-77* OptiLink® *Reference interconnect cable (RCA-type).*
vi. *CD-77 Owner's Manual.*
vii. *Quick-Start Card.*
viii. *AMR Warranty Card.*
ix. *AMR System Test Disk.*
x. *Aluminium professional flightcase.*

Please ensure that all items are present. Should an item be missing, please contact your AMR distributor/dealer.

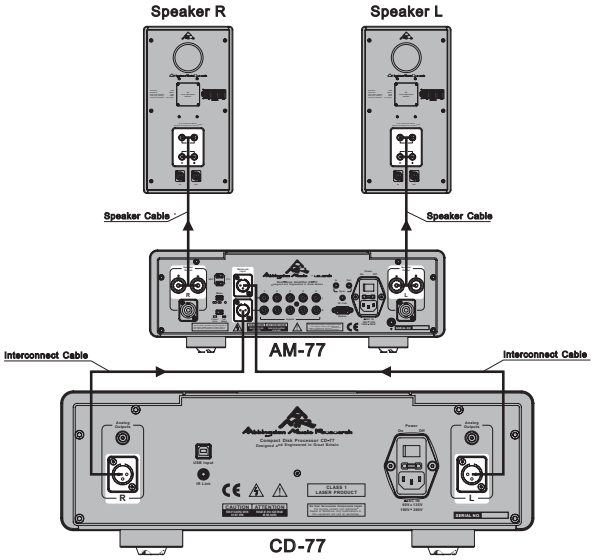
Downloaded from www.Manualslib.com manuals search engine

1b. Setup

The following diagram graphically illustrates the standard connection of the CD-77 in a two-channel system.

Figure 1.3 - CD-77 System Setup (CD-77 + AM-77 + LS-77)

System connection using XLR connectors



Downloaded from www.Manualslib.com manuals search engine

Optional IC-77 (XLR-type) interconnect can be purchased separately

i. Unpack the CD-77 and remove the protective foam insert inside the CD well.

ii. Remove the protective sheet from the acrylic front panel.

iii. Ensure the CD-77 is located on a level and solid surface capable of supporting at least 50 kgs.

iv. Using the spirit level located inside the CD well, check the CD-77 is on a level platform

v. Connect the IC-77 RCA-type interconnect via the left (blue/white) and right (red) leads to the respective channels at the rear of the CD-77.

vi. Connect the other end of the IC-77's left and right channels to the respective inputs of the amplifier. Ensure that the correct colour-coding is adhered.

vii. Connect the IEC end of the PC-77 mains power cable to the mains receptacle of the CD-77 and connect the mains plug into a mains socket power source.

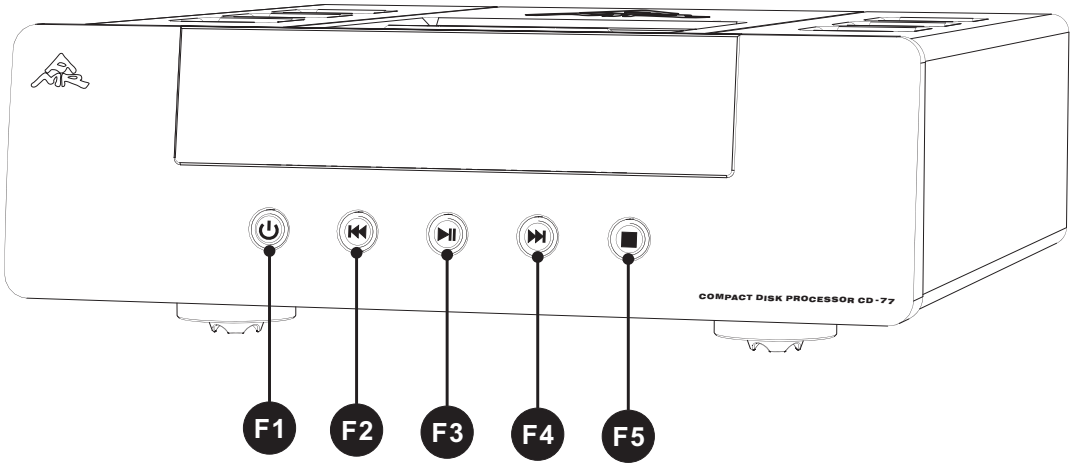
Transporting/Moving the CD-77

Prior to any transportation/movement, ALWAYS replace the protective foam insert inside the CD well. Without this, the CD door sensor may be knocked out of position due to the heft of the CD door moving in transit.

IF the protective foam insert has been misplaced, use sellotape to rigidly hold the CD door open prior to transportation.

Downloaded from www.Manualslib.com manuals search engine

Figure 2.1 - CD-77 Front Fascia



F1. STANDBY button: to place the CD-77 in active or standby mode.

F2. REV/REVERSE button: to select the previous track/fast reverse.

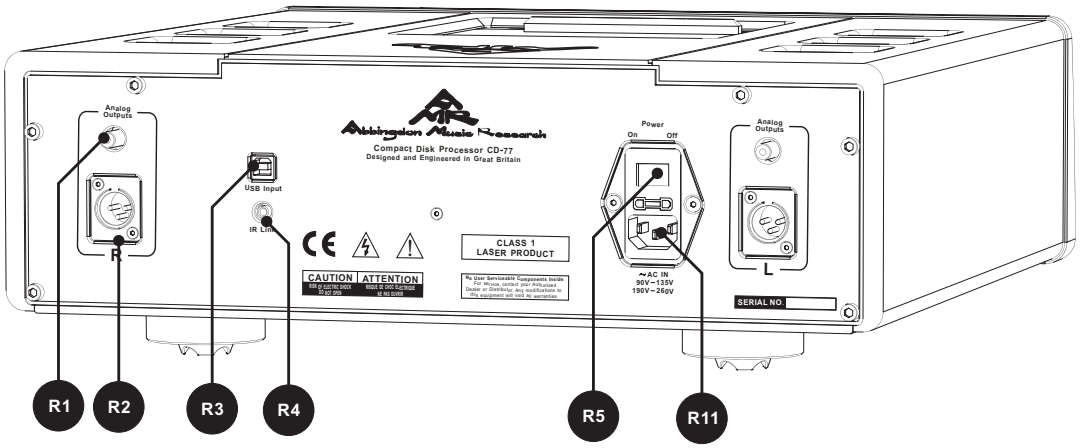
F3. PLAY/PAUSE button: to initiate playback/pause once a compact disk has been correctly loaded.

F4. FWD/NEXT button: to select the following track/fast forward.

F5. STOP button: to halt/stop play.

Downloaded from www.Manualslib.com manuals search engine

Figure 2.2 - CD-77 Rear Panel



R1. RCA Outputs: for the connection RCA interconnects.

R2. XLR Outputs: for the connection of XLR interconnects.

R3. USB Input: for the connection of a USB signal input.*

R4. INFRA-RED Link: for the connection of a wireline remote control.*

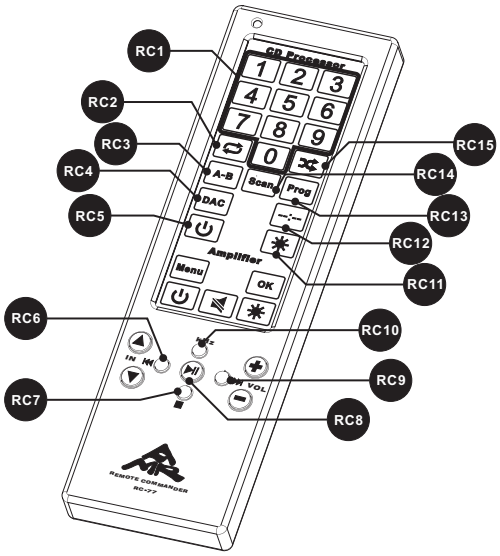
R5. POWER Switch: to switch on mains electricity to the CD-77.

R11. IEC power connector: for the connection of PC-77 mains power cable to the CD-77.

** Please refer to Section 3 - Advanced Features for a detailed explanation.*

Downloaded from www.Manualslib.com manuals search engine

Figure 2.3 - RC-77 Remote Control



RC-77: battery installation

To install the 2 x AAA batteries, using a Philips screwdriver, remove the four screws at the four corners of the rear battery compartment.

Install the 2 x AAA batteries in the correct direction according to the baseplate inside the battery compartment.

Replace the battery compartment and the four cover screws.

Downloaded from www.Manualslib.com manuals search engine

RC1. Numeric Pad: to enter track selections.
RC2. REPEAT button: to select a repeat mode.
RC3. A-B button: to select an excerpt from a track for repeat.
RC4. DAC button: with a USB connection made, to bypass the transport and enter DAC mode.
RC5. STANDBY button: to place the CD-77 in active or standby mode.
RC6. REV/REVERSE button: to fast reverse or select the previous track.
RC7. STOP button: to halt/stop play.
RC8. PLAY/Pause button: to commence playback or to pause playback.
RC9. FWD/NEXT button: to fast forward or select the following track.
*RC10. SAMPLING button: to cycle through the 6 different Optisample® modes.**
RC11. BRIGHTNESS button: to switch between 4 different brightness levels including display off.
RC12. TIME button: to alternate between the display of current track or time remaining.
RC13. PROGRAM button: to program an order of playback.
RC14. SCAN button: to commence a 10 second or 30 second scan of each track.
RC15. SHUFFLE button: to select random shuffle of music tracks.

NOTE: **Please refer to Section 3 - Advanced Features for a detailed explanation.*

Downloaded from www.Manualslib.com manuals search engine

2. Start-Up

1. Power On/Off

Press the 'POWER' switch (R5) at the rear of the CD-77 to switch mains power ON to the CD-77.

Once powered OFF: always wait 20 seconds before switching on again

To switch the mains power OFF, press again and release. **Always WAIT at least 20 seconds** before switching on again. This is to enable the *OptiMains*® circuit to shutdown properly.

The display will light up to indicate the unit is switched on and ready for use. This should take just under 1 minute as the *OptiMains*® circuit is verifying the incoming mains and the CD processor is warming up.

The display should flash the message:

```
Optimising Supply Voltage
```

it will then change to:

```
Warming Up
45 s
```

The display will then countdown the remaining warm-up time.

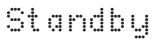
Once the *OptiMains*®circuitry has completed its initiation process, the CD-77 is ready for operation.

Downloaded from www.Manualslib.com manuals search engine

2. Standby

After start-up, pressing the STANDBY button (F1) on either the front fascia or the RC-77 (RC5), the CD-77 will switch to STANDBY mode.

Standby will maintain power to the non-valve circuitry



By pressing this button again, the CD-77 will commence warm-up to prepare for operation.

Under STANDBY mode, power to CD-77's digital circuit is kept active in order to provide the optimum performance for the next listening session. However, power to the valves will be switched off to preserve valve life.

3. Loading (Autoplay)

To play a compact disc, slide back the top-loading CD door. Remove the CD puck and place the compact disc in the large circular recess in the well, with its transparent playing surface facing down. The label side of the compact disc MUST face UP.

Replace the CD puck in the center and close the lid. Make sure the CD puck is correctly centered and positively engaged.

Close the CD door so that the CD-77 is able to scan the compact disc's TOC (Table of Contents) and display the total number of tracks and playing time.

Downloaded from www.Manualslib.com manuals search engine

Upon closing the door, play will automatically commence from Track 1. This Autoplay feature can be enabled/disabled by simultaneously pressing the STOP button (F5) on the front fascia of the CD-77 and pressing the PLAY/PAUSE button (RC8) on the RC-77 remote control.

Always use the CD puck

NOTE: The CD-77 has been designed to play all types of compact discs including the CD layer of hybrid SACD's. However, as such discs are thicker, please ensure the CD puck is positively engaged with the spindle. We do not recommend the placement of any type of 'damping disc' on top of a compact disc.

4. Display

The display provides information about playback status and the optical pickup's location on the compact disc.

5. Play/Pause

Once the compact disc has been correctly placed in the CD-77, press PLAY/PAUSE (F3) on either the front fascia of the compact disk processor or on the RC-77 (RC8), to commence playback.

During playback, at anytime, pressing PLAY/PAUSE again, on either the front fascia or the RC-77, playback will be paused. To resume playback, press PLAY/PAUSE once more.

When the recording was made on the compact disc, it was segmented into numbered tracks. Typically each numbered track will correspond to a different song, symphonic movement, etc. These track numbers are identified on the CD package and are encoded in the disc by its manufacturer. As a result, the display will automatically illustrate the current track number and the elapsed time of a particular track (or other time indications as selected via the remote control).

Downloaded from www.Manualslib.com manuals search engine

6. Stop

At any time, pressing the STOP button (F3) once on either the front fascia or the RC-77 (RC7) will halt playback.

7. FWD/Next

At any time, pressing FWD (F4) once on either the front fascia or the RC-77, the next track will be selected. By holding down FWD (F4) or (RC9), playback will fast forward until the button is released.

8. REV/Reverse

At any time, pressing REV (F2) once on either the front fascia or the RC-77 (RC6), the previous track will be selected. By holding down REV (F2) or (RC6), playback will reverse until the button is released.

9. Numeric Pad (RC-77 only)

This encapsulates the numbers 0-9 on the numeric pad. By pressing any combination of the numeric keys, a desired track may be selected directly.

For example, to select Track 2, press ‘2’; to select Track 21, press ‘2’ and then ‘1’.

Downloaded from www.Manualslib.com manuals search engine

10. Repeat (RC-77 only)

If the REPEAT button (RC2) is pressed once:

Repeat One

will be displayed and the current track will be repeated.

If the REPEAT button (RC2) is pressed AGAIN:

Repeat All

will be displayed: once the last track of the compact disc has been played, instead of stopping, the CD-77 will revert to Track 1.

11. A-B (RC-77 only)

The A-B button (RC3) is for the manual selection of a chosen piece of music within a track for repetition.

When the A-B button (RC3) is pressed once;

Downloaded from www.Manualslib.com manuals search engine

Repeat A-B

will be displayed with the letter ‘B’ flashing. This means that it has commenced the selection of that passage of music. By pressing the A-B button (RC3) again:

Repeat A-B

will be displayed with the letter ‘B’ no longer flashing. This is to confirm the particular passage of music has been identified and repeat will commence.

To cancel this program, press the A-B button (RC3) again.

12. DAC Input (RC-77 only)

The DAC button (RC4) is for the replay of music on the CD-77 from music stored on a computer hard-drive via a USB-to-USB cable connection.

To establish the connection between the CD-77 and the hard disk source:

i. Power ON the CD-77.

ii. On the RC-77 press the DAC button (RC4) to place the CD-77 in DAC mode.

iii. Power ON the personal computer.

iv. Connect the USB cable between the CD-77 and the personal computer.

Downloaded from www.Manualslib.com manuals search engine

v. Go to 'Control Panel' > 'System' > 'Hardware' > 'Device Manager'. In 'Device Manager' wait until the personal computer in 'Hardware' has recognised the CD-77 as a 'USB Audio Device'. This is found under the 'Sound, video and game controllers' category.

vi. Go to 'Control Panel' > 'Sounds and Audio Devices' > 'Audio'. Make sure 'USB Audio Device' is selected as the default device under the 'Sound playback' box.

vii. Select and playback music on the personal computer using suitable software (Apple ® iTunes®, Foobar®, Winamp®, Windows® Media Player, Windows® Media Center et al).

13. OptiSample® (RC-77 only)

With or without a compact disc playing, if the OPTISAMPLE button (RC10) is pressed, the current sampling method (the default is Digital Master II) will be displayed for 3 seconds.

Within this timeframe, press again to cycle through each of the 6 different sampling methods: from Digital Master I through to Upsampling at 192kHz.

See *Section 3 - Advanced Features* for a detailed explanation.

14. Brightness (RC-77 only)

The BRIGHTNESS button (RC11) allows for the adjustment of the display on the front fascia of the CD-77. There are 4 different brightness settings including display off. With a separate power supply, the display has no impact upon the sonic performance.

Downloaded from www.Manualslib.com manuals search engine

15. Time (RC-77 only)

Normally the display will show the time elapsed since the beginning of the current track but pressing the TIME button (RC12) on the RC-77, the display will show and cycle through:

Elapsed Track Time > Track Remaining
> Total Remaining

16. Scan (RC-77 only)

Press the SCAN button (RC13) once:

Intro Scan 10s

will be displayed and the first 10 seconds of every track will be played before moving onto the next track until all tracks have been played.

Downloaded from www.Manualslib.com manuals search engine

By pressing the SCAN button again:

Intro Scan 30s

will be displayed and the first 30 seconds of every track will be played until all tracks have been played.

17. Program (RC-77 only)

Press the PROGRAM button (RC13) and:

Program No: 01

will be displayed.

Thereafter select the track via the numeric keypad (RC1).

Program No: 02

will then be displayed and the same routine is repeated. To commence playback, press PLAY/PAUSE (RC8).

Downloaded from www.Manualslib.com manuals search engine

18. Shuffle (RC-77 only)

Press the SHUFFLE button (RC15) and the playback of music tracks will be randomly selected.

Downloaded from www.Manualslib.com manuals search engine

The following section describes and where relevant, provides instructions to access the CD-77's advanced features.

3a. OptiSample®

The CD-77 Compact Disk Processor offers 6 user-selectable methods of Sampling that can be 'cycled through' during playback by pressing the *OptiSample*® button (RC10) on the RC-77. The sampling options are:

1. Digital Master I – this mode directly takes the data extracted from the CD and re-clocked to generate the music signal. Due to the complete lack of digital or analogue filtering, the treble frequencies are slightly rolled off, making the sound somewhat soft and laid-back. For the same reason, the mid-range and below is very natural and realistic. The reproduction of impulses is undistorted. This mode often helps to 'tame' overly-bright recordings.

Digital Master II is the benchmark for playback

2. Digital Master II (default) – this mode is identical to Digital Master I but complements this with a special analogue filter which corrects the roll-off in the treble frequencies. As a result, the tonality is more accurate in the treble. We therefore recommend this mode as the benchmark with which to enjoy music.

3. Oversampling 2x – this mode engages the Digital Filter with an oversampling factor of 2, thus performing the least digital processing possible (except for no digital processing). The original data from the CD is in effect discarded and re-placed with a re-computed version. This new version of the music is mainly linearly scaled up using a whole number as scaling factor and resolution/edge enhanced. The sonic result of oversampling mirrors those of resolution enhancement in digital photographs: more apparent detail is noticeable. However, impulse reproduction is slightly distorted, leading often to a slight perception of an edginess or graininess.

4. Oversampling 4x – this mode engages the Digital Filter with an oversampling factor of 4, performing quite

Downloaded from www.Manualslib.com manuals search engine

a large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is mainly linearly scaled up using a whole number as scaling factor and resolution/edge enhanced. The sonic result of Oversampling 4x is similar to that of Oversampling 2x; except more accentuated.

OptiSample modes 4-6 offer more typical versions of digital playback

5. Upsampling at 96kHz – this mode engages the Upsampler with a sampling frequency of 96kHz, performing quite a large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is non-linearly scaled up using a complex number as scaling factor and resolution/edge enhanced. The sonic result of upsampling is similar to oversampling; however there are subtle degrees of change in the tonality due to a shift in the harmonic spectrum as a result of the complex number which underlies the scaling.

6. Upsampling at 192kHz – this mode engages the Upsampler with a sampling frequency of 192kHz, performing a very large degree of digital manipulation. The original data from the CD is in effect discarded and re-placed with a re-calculated version. This new version of the music is non-linearly scaled-up using a complex number as scaling factor and resolution/edge enhanced. The sonic result of 192kHz upsampling is similar to 96kHz upsampling. However, as the complex numbers that underlie the upsamplings are different to oversampling, the shift in the harmonic spectrum is not the same: hence tonality is somewhat different.

Downloaded from www.Manualslib.com manuals search engine

3b. DAC Input

An S/PDIF link was not offered as this method results in excessive sonic degradation

It is possible to allow playback of a large library of music to an exceptionally high standard through the CD-77's DAC option (See Section 2 item 12 for connection details). Under the DAC mode, the DAC section of the compact disk processor will disengage from the transport section. Instead, the digital signal from the USB input (R3) located at the rear of the CD-77 will be used as the music signal source.

It is worth noting that the isosynchronous USB connection used in the CD-77, because of the almost negligible introduction of jitter, offers a sonic performance that is virtually indistinguishable from CD playback via the integral transport.

3c. Infra-Red Link

When using the CD-77 as part of a Home Theatre system, it is possible to connect a wireline remote control cable to the IR link (R4). The CD-77 will become "slaved" to the remote control operation of the Home Theatre system.

3d. Crowbar 'Muting' Circuit

Crowbar Muting Ciruit when not required, is out of the signal path

During switch-on and standby/resume operation, the output of the CD-77 is 'muted' (turned off) in order to prevent any audible thumping noises during this period. Unlike the commonly used muting switches or transistors which are connected in series with the music signal, AMR has employed a relay which shunts across the output (a crowbar circuit). As a result, the muting circuit is completely removed from the path of the music signal when not needed yet when engaged, offers complete protection for any equipment connected to the CD-77.

Downloaded from www.Manualslib.com manuals search engine

3e. *OptiMains*® Protection for Excessive Under/Over-Voltages

The CD-77 is fitted with the *OptiMains*® system to condition and adjust the incoming mains supply for the best operation under all normal mains conditions (including situations that will cause audible problems without *OptiMains*®).

In the event there are excessive mains fluctuations...

With almost every country throughout the world, instances inevitably arise where fluctuations in the main electricity exceeds that of a correctly operating mains supply and any electrical item/product is no longer properly served. In the case of extreme power surges, brown outs or other exceptional/unexpected conditions that exceed the safety margins, the *OptiMains*® system will automatically switch off the mains power to the internal parts of equipment to prevent any damage from occuring.

If the display reads:

...OptiMains® will detect and protect

```
A C   V o l t a g e   O u t s i d e

  O p e r a t i n g   R a n g e !
```

Power OFF the AMR component and wait at least 5 minutes. If and when the mains electricity has been deemed to have returned to normal (such as during a brown out and the lights have dimmed but have returned to normal brightness) then power up your AMR component as per the manual's instructions.

Downloaded from www.Manualslib.com manuals search engine

Section 4 - Technical Features

Abbingdon Music Research

The following section provides a brief explanation of the most salient technical features of the CD-77.

The original Philips TDA1541A digital-to-analogue converter in AMR's testing and auditioning remains to-date, the most musically satisfying chipset for digital-to-analogue conversion.

OptiSignal® conditioning circuit has optimised every single operating parameter of the Philips TDA1541A including off as well as onboard circuits.

OptiSample® digital engine is AMR's incorporation of the most advanced digital filter yet: the Digital Signal Processing (DSP) engine from Texas Instruments.

OptiClockLock® system ensures all the clocks in the CD-77 are purposely synchronised to one temperature-compensated, low-jitter master clock module with its dedicated power supply.

OptiDrive® transport mechanism ensures reading of the compact disk is virtually without errors or jitter.

OptiReg® digital power supply is the employment of 14 different, but specifically designed regulators that combine to virtually eliminate digital noise.

OptiValve® analogue output stage uses NOS valves in dedicated circuits for the amplification, rectification and output stages.

OptiMains® will ensure the correct voltage is *always* supplied to the relevant internal sub-sections.

OptiTrans® power supply transformers are advanced double C-Core types which sonically, are superior to R-Core and comprehensively outclass traditional EI and toroidal transformers.

For a more detailed explanation of these and other features, please go to: www.amr-audio.co.uk

Downloaded from www.Manualslib.com manuals search engine

Appendix - Troubleshooting & Maintanence

Figure A.1 Troubleshooting Guide

Symptom	Possible cause	Solution
'Disc Error' or 'No Disc' is shown	• dirty or heavily scratched CD disc • wrong disc type	• clean the CD disc • replace with a proper CD disc
Disc spinning erratically	• dirty or heavily scratched CD disc • CD puck improperly attached	• clean the CD disc • replace CD puck properly
No power when the power button is set to ON	• poor or no power plug connection at power point • blown fuse at mains plug	• insert the power plug firmly into the AC • change mains plug fuse
No sound	• incorrect audio cable connections • incorrect CD-77 operation	• ensure the CD-77 is correctly connected • ensure input selector on the amplifier is set to desired source for the CD-77
Remote control does not work	• batteries in remote control handset have expired • object obscuring remote sensor on the CD-77, no "line of sight"	• replace batteries • remove any objects directly in front of the CD-77
A 'humming' sound can be heard	• loose cable connections	• re-attach the loose cables correctly
Other problems		• go to the Contents section and re-trace the procedure or contact your nearest AMR distributor/dealer

Downloaded from www.Manualslib.com manuals search engine

Maintenance

i. About the Optical Pickup

The CD-77 uses a solid-state semi-conductor diode laser, mounted on a tracking servo-mechanism to play the disc. The laser illuminates the track of microscopic pits representing the digital data bits, while photo-diodes detect the reflected illumination from the disc and convert it into an electronic signal which is then decoded to recover the musical waveform in each stereo channel. It is not possible to see the laser operating, because it operates at wavelength of 7800 Angstroms, which is in the infrared and thus invisible to the human eye.

The compact disk processor is completely safe for children to use. The laser operates at very low power and is concealed within the CD-77's mechanism. Even when the CD-77 is disassembled, the laser remains sealed within an optical system that causes its light to focus only 1 millimetre from the lens and then diverge rapidly, reducing its intensity to negligible levels.

CLASS 1 LASER PRODUCT
No User Serviceable Components Inside.
For service, contact your Authorised
Dealer or Distributor.
Any modifications to this equipment will
void all warranties.

ii. Factors that affect Playability

The quality of the compact disc itself and that includes the fact there should not be too many scratches on the surface. Generally speaking, CD-R & CD-RW blanks from well-renowned companies give better results than unbranded ones.The quality of CD-recorder or computer CD re/writer: some recorders and writers produce better results than others.

Although the CD-R & CD-RW is typically created using high-speed writing, in general, the quality of a CD-R & CD-RW is better when recorded at a lower speed against a higher speed on the same recorder or re/writer.

Downloaded from www.Manualslib.com manuals search engine

iii. CD-R & CD-RW Audio Discs

The CD-77 can play CD-R & CD-RW audio discs that have been recorded on a computer or CD-recorder. The quality of CD-R & CD-RW audio discs varies widely which may affect playability.

iv. Handling Compact Disks

Always handle Compact Discs with care. The playback of a disc will not be impaired by small dust particles, a few light fingerprints, or slight scratches. But large scratches, or a thick layer of oily fingerprints, can prevent the CD-77 from tracking the disc properly.

Incidentally, although the tracking optical pickup “plays” the disc through its clear side, the actual data surface is embedded directly beneath the label, protected only by a very thin coating of lacquer. So a scratch that cuts through the label may damage the disc more than a similar scratch on the transparent ‘playing’ surface. Thus you should treat both surfaces of the disc with care.

Severe scratches or fingerprints may cause the CD-77 to miss-track (skipping ahead, or repeating the same passage). Less severe damage may produce very brief bursts of high-frequency noise. The tracking and error-correction circuits of this compact disc processor player are unusually sophisticated, providing secure tracking of flawed discs that are unplayable on some other players. Nevertheless, the discs should not be abused or handled carelessly. For best results, grasp the disc only by its edges.

Downloaded from www.Manualslib.com manuals search engine

Specifications

Figure S.1 - Specifications Table

Transport Disk Drive:	Toploading proprietary AMR transport mechanism
Operation modes:	• Direct Master I; no digital or analogue filter • Direct Master II; no digital filter, anti-sin(x)/(x) analogue filter • Oversampling 2x • Oversampling 4x • Upsampling 96kHz • Upsampling 192kHz
Digital Audio Inputs:	1 x USB interface
Analogue Outputs:	1 x RCA; 1 x XLR per channel
Thermionic Electron Valves	ECC81/12AT7 (NOS): amplification stage 5687/6900 (NOS): output buffer stage EZ80/6CA4 (NOS): rectifier stage

Downloaded from www.Manualslib.com manuals search engine

Output voltage (Digital Full Scale) :	≥ 2V
Output Impedance:	≤ 150 Ohm
Frequency Response:	20Hz to 20 kHz +0.0, -0.5dB
Signal-to-noise ratio 'A' Weighted:	≥ 100 dB
Total Harmonic Dist. + Noise (THD+N):	≤ 0.3%
Dynamic range:	≥ 90 dB
Channel separation:	≥ 90 dB
Power consumption:	Standby: 45 W
Power on:	90W
Rated voltage:	90V-135V & 190V-260V AC
Colour:	Champagne or Titanium

Downloaded from www.Manualslib.com manuals search engine

Dimensions:	17.9in W by 6.2in H by 18.3in D 46cm W by 16cm H by 47cm D 62 cm W by 30cm H by 78cm D (shipped)
Weight:	CD-77: 62 lbs/28 kg Shipped: 107 lbs/49 kg

Unless specified otherwise, the Specifications apply to the 4 x OverSampling mode and a Digital full scale signal using IHF loading.

Information and specifications subject to change without notice.

Abbingdon Music Research is a subsidiary of the Abbingdon Global Group
22 Notting Hill Gate; London; W11 3JE; United Kingdom;
Tel: +44 (0) 870 420 5505; Fax: +44 (0) 700 596 1065

Downloaded from www.Manualslib.com manuals search engine